



Source Water Assessment Program (SWAP) Report For Hubbardston House Apts.

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- ? Inventory land uses within the recharge areas of all public water supply sources;
- ? Assess the susceptibility of drinking water sources to contamination from these land uses; and
- ? Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the
Massachusetts Department of
Environmental Protection,
Bureau of Resource Protection,
Drinking Water Program

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Table 1: Public Water System (PWS) Information

PWS NAME	HUBBARDSTON HOUSE APARTMENTS
PWS Address	1 OLD PRINCETON ROAD CUTOFF
City/Town	HUBBARDSTON, MASSACHUSETTS
PWS ID Number	2140010
Local Contact	LISA CHAVES
Phone Number	(978) 928-5922

Well Name	Source ID#	Zone I (in feet)	IWPA (in feet)	Source Susceptibility
Well #1	2140010-01G	210	520	High

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

The well for the facility is located behind building A. The well has a Zone I of 210 feet and an Interim Wellhead Protection Area (IWPA) of 520 feet. The IWPA provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone I and IWPA. **The well serving the facility has no treatment at this time.** For current information on monitoring results and treatment and **for a copy of the most recent Consumer Confidence Report**, please contact the Public Water System contact person listed above in Table 1. **Drinking water monitoring reporting data is also available on the web via EPA's Envirofacts website at http://www.epa.gov/enviro/html/sdwis/sdwis_query.html.**

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Inappropriate Activities in Zone Is;**
2. **Underground Storage Tanks (UST) with Heating Oil;**
3. **Septic systems;**
4. **Hazardous Material Storage and**
5. **Aquatic wildlife.**

The overall ranking of susceptibility to contamination for the well is **high**, based on the presence of at least one **high** threat land use or activity in the IWPA, as seen in Table 2.

1. **Zone Is** – Currently, the well does not meet DEP's restrictions, which only allow water supply related activities in Zone Is. The facility's Zone I contains **buildings, (Multifamily/elderly) housing, roads, storage area in the the building for the lawn mower, snow blower and five gallon container with gasoline, and paved and bermed parking area. The public water supplier does not own and/or control all land encompassed by the Zone I.** Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

Recommendations:

- ✓ Remove all non-water supply activities, especially the hazardous materials storage, from the Zone I to comply with DEP's Zone I requirements.
 - ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.
 - ✓ If the facility intends to continue utilizing the structures, roads, and parking areas in the Zone I, use BMPs and restrict activities that could pose a threat to the water supply.
2. **Underground Storage Tank** - Two 750 gallon UST with #2 fuel oil are located within the protection area. Each of the USTs is 15 years old. There are plans to ask for funding to replace the two USTs. If managed improperly, USTs can be a potential contaminant source due to leaks or spills of the chemicals they store.

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Fuel Storage Below Ground	No	Yes	High	Heating oil tank
Storage and use of hazardous materials	Yes	Yes	Moderate	Gasoline used in lawn mower & snow blower stored in storage area
Parking lot	Yes	Yes	Moderate	Limit road salt usage and provide drainage away from wells
Septic System	No	Yes	Moderate	See septic systems brochure in the appendix
Structures	Yes	Yes	-	Non-water supply structures in Zone I

* -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

Recommendations:

- ✓ Consult with the local fire department for any additional local code requirements regarding USTs.
- ✓ Any modifications to the USTs must be accomplished in a manner consistent with Massachusetts's plumbing, building, and fire code requirements.

3. **Septic system** - Two septic tanks are located within the protection area. The tanks are pumped annually. If a septic system fails or is not properly maintained it could be a potential source of microbial contamination. Improper disposal of household hazardous chemicals to septic systems is a potential source of contamination to the water supply.

Recommendations:

- ✓ Encourage participation in the Town of Hubbardston Household Hazardous Waste collection to discard of spent chemicals.
- ✓ Septic system components should be located, inspected, and maintained on a regular basis. Refer to the attachments for more information regarding septic systems.

4. **Hazardous material storage** – A five gallon container with gasoline is stored in a storage area in building A. If managed improperly, leaks or spills of any of these chemicals could be potential sources of contamination of the water supply.

Recommendations:

- ✓ Move all hazardous materials to a storage location outside the Zone I.
 - ✓ Use Best Management Practices in the storage, handling, and disposal of hazardous chemicals to prevent leaks or spills.
6. **Aquatic wildlife** - A pond is located within the protection area. Duck and other wildlife waste in and around the pond is a potential source of contamination to the water supply.

Recommendation:

- ✓ Discourage wildlife by prohibiting the feeding of ducks or other wildlife.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the well's susceptibility to contamination. Hubbardston House Apartments is commended for upgrading two other USTs with heating oil at the site, and for maintaining the septic system. Hubbardston House Apartments should review and adopt the key recommendations above and the following:

Priority Recommendation:

- ✓ The storage area for the lawn mower, snow blower and five gallon gasoline store container should be moved out of the Zone I.

Zone I:

- ✓ Consider well relocation if Zone I threats cannot be mitigated.
- ✓ Do not use road salt within the Zone I.

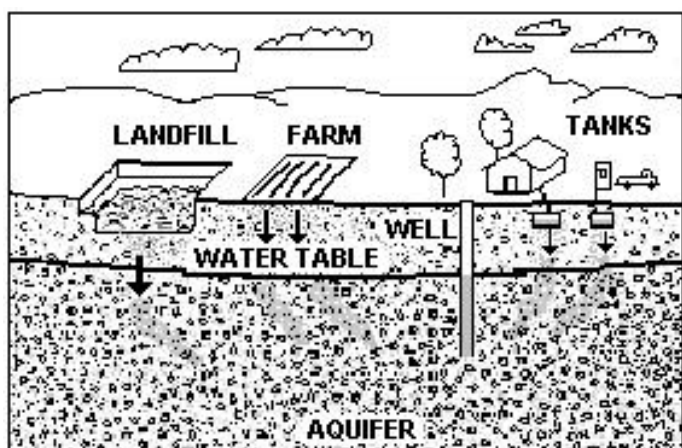


Figure 1: Example of how a well could become contaminated by different land uses and activities.

For More Information:

Contact **Josephine Yemoh-Ndi** in DEP's **Worcester Office** at **(508) 792-7650 x 5030** for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at:

www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws/, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been provided to the public water supplier, town boards, the town library and the local media.

Training and Education:

- ✓ Train staff on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, groundskeepers, certified operator, and food preparation staff. Post labels as appropriate on raw materials and hazardous waste.

Facilities Management:

- ✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials. To learn more, see the hazardous materials guidance manual at www.state.ma.us/dep/bwp/dhm/dhmpubs.html.
- ✓ Upgrade all oil/hazardous material storage tanks to incorporate proper containment and safety practices.

Planning:

- ✓ Work with local officials in **town** to include the **facility IWPA** in **Aquifer Protection District Bylaws** and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- **Your Septic System Brochure**

